ABSTRACT

A method for growing a silicon crystal by a Czochralsky method, wherein, let a pulling speed be V (mm/min) and an average value of an in-crystal temperature gradient in a pulling axis direction within a temperature range, a silicon melting point to 1350 °C, be G (°C/mm), V/G ranges from 0.16 to 0.18 mm^2/°C min between a crystal center position and a crystal outer periphery position, and a ratio G outer/G center of an average value G of an in-crystal temperature gradient in a pulling axis direction within a temperature range, a silicon melting point to 1350 °C, at a crystal outer surface to that at a crystal center is set to up to 1.10 to thereby obtain a high-quality perfect crystal silicon wafer. Such a perfect crystal silicon wafer, wherein an oxygen concentration is controlled to up to 13 x 10^{17} atoms/cm^3, an initial heat treatment temperature is at least up to 500 °C and a temperature is raised at up to 1 °C/min at least within 700 to 900 °C, thereby making uniform a wafer radial distribution to an arbitrary oxygen precipitation density level.